FRODINGHAM IRON & STEEL (Foreign & Colonial) CO.,

LIMITED,

PERTH, FREMANTLE, KALGOORLIE.

WESTERN AUSTRALIA.

—

1906.

FRODINGHAM IRON & STEEL

(FOREIGN AND COLONIAL) CO. LTD.,

FRODINGHAM, NEAR DONCASTER, ENGLAND.

Structural Steel Yard,
PERTH.

RESIDENT REPRESENTATIVES AND ATTORNEYS:

SAUNDERS & STUART,

PERTH,
FREMANTLE,
KALGOORLIE.

CABLES: "CYCLOPS, PERTH."

TELEPHONES: { PERTH.
{ FREMANTLE.
{ KALGOORLIE.

Pig Iron.

Brand: "FRODINGHAM."

Sectional Steel.

By the Siemens Open Hearth Process.

Brand for Bars and Sections:

"CLIFF."

Brand for Beams and Channels:

"FRODINGHAM IRON & STEEL CO. LTD., ENGLAND."

ESTIMATES SUBMITTED FOR

STEEL STRUCTURAL WORK

OF ANY DESCRIPTION.

CONDITIONS.

—*—

1.   All steel supplied subject to tests or inspection must be tested and inspected at these works, such testing or inspection to be final, as we shall not be responsible for such steel after it has left these works.

The works are provided with perfect testing machines and chemical laboratories, and a skilled staff to carry out both mechanical and chemical tests.   All steel manufactured undergoes thorough mechanical and chemical testing, whether inspected or not.

2.   Any steel returned and accepted by us as defective shall be replaced if required, but shall not form the subject of claim for labour or other expenditure.

3.   A rolling margin of $2\frac{1}{2}\%$ up and down is required, and a margin in length of one inch up and down unless otherwise stated.

4.   Cold sawing, punching, drilling, riveting, compounding, and other work quoted for and done subject to approval of drawings.

# BILLETS.
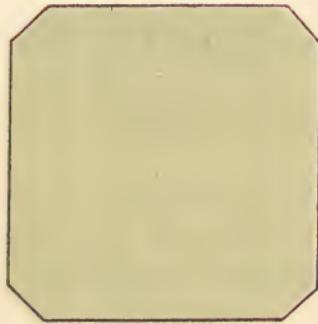
2″, $2\frac{1}{4}$″, $2\frac{1}{2}$″, $2\frac{3}{4}$″, 3″, $3\frac{1}{4}$″, $3\frac{1}{2}$″, 4″, $4\frac{1}{2}$″ square.

Billets can be supplied with Carbon from ·08% to ·75%, a range of ·05% being required.

BLOOMS.
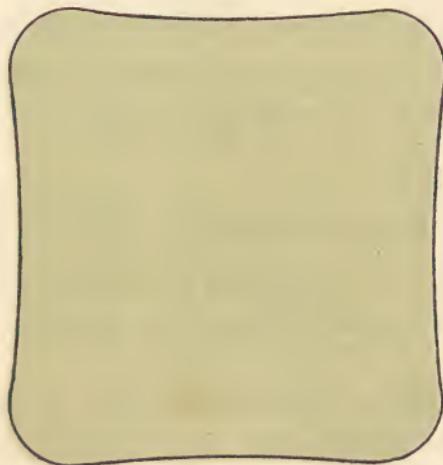
5″, $5\frac{1}{2}$″, 6″, $6\frac{1}{2}$″, 7″, $7\frac{1}{2}$″, 8″, $8\frac{1}{2}$″, 9″, $9\frac{1}{2}$″, 10″ square.

Intermediate sizes can be supplied.

SLABS.
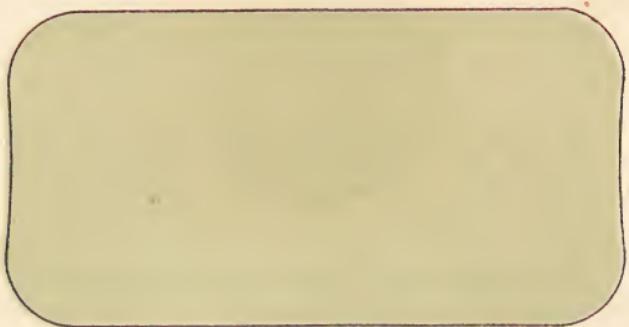
4″, 5″, 5½″ wide, from 1½″ to 3″ thick.

6″, 7″, 8″   ,,   ,,   2″ ,, 6″ ,,

9″, 10″, 11″ ,,   ,,   2″ ,, 10″ ,,

12″, 13″, 14″ ,,   ,,   2½″ ,, 10″ ,,

15″, 16″, 17″ ,,   ,,   3″ ,, 10″ ,,

18″   ,,   ,,   4″ ,, 10″ ,,

Intermediate widths and thicknesses can be supplied.

ROUNDS.
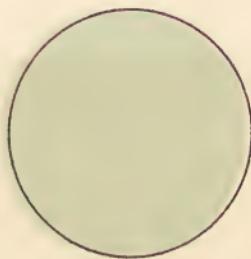
When Round Bars are required for turning and to carry a bright surface, there should be added to the diameter as follows :—

$\frac{1}{8}$ inch diameter for bars up to 4 inches diameter.

| $\frac{1}{4}$ | ,, | ,, | 6 | ,, |
| $\frac{3}{8}$ | ,, | ,, | 7 | ,, |

For over 30′ 0″ in length a further $\frac{1}{8}''$ diameter should be allowed.

EXTRAS.

SIZE, under 2″ to $1\frac{1}{2}''$ diameter

LENGTH, $1\frac{1}{2}''$ to 2″ over 25 feet

,, $2\frac{1}{16}''$ to 6″ over 30 feet

,, $6\frac{1}{16}''$ to 7″ over 25 feet

,,   under 5 feet

COLD STRAIGHTENING

Diameter	Diameter	Diameter	Diameter	Diameter
Inch	Inch	Inches	Inches	Inches
$\frac{1}{2}$ bare	$\frac{3}{4}$ full	$1\frac{1}{16}$	$2\frac{3}{8}$	$4\frac{3}{4}$
$\frac{1}{2}$	$\frac{25}{32}$	$1\frac{3}{32}$	$2\frac{1}{2}$	$4\frac{7}{8}$
$\frac{1}{2}$ full	$\frac{13}{16}$ bare	$1\frac{1}{8}$	$2\frac{5}{8}$	5
$\frac{17}{32}$	$\frac{13}{16}$	$1\frac{5}{32}$	$2\frac{3}{4}$	$5\frac{1}{8}$
$\frac{9}{16}$ bare	$\frac{13}{16}$ full	$1\frac{3}{16}$	$2\frac{7}{8}$	$5\frac{1}{4}$
$\frac{9}{16}$	$\frac{27}{32}$	$1\frac{7}{32}$	3	$5\frac{3}{8}$
$\frac{9}{16}$ full	$\frac{7}{8}$ bare	$1\frac{1}{4}$	$3\frac{1}{8}$	$5\frac{1}{2}$
$\frac{19}{32}$	$\frac{7}{8}$	$1\frac{9}{32}$	$3\frac{1}{4}$	$5\frac{5}{8}$
$\frac{5}{8}$ bare	$\frac{7}{8}$ full	$1\frac{5}{16}$	$3\frac{3}{8}$	$5\frac{3}{4}$
$\frac{5}{8}$	$\frac{29}{32}$	$1\frac{3}{8}$	$3\frac{1}{2}$	$5\frac{7}{8}$
$\frac{5}{8}$ full	$\frac{15}{16}$ bare	$1\frac{7}{16}$	$3\frac{5}{8}$	6
$\frac{21}{32}$	$\frac{15}{16}$	$1\frac{1}{2}$	$3\frac{3}{4}$	$6\frac{1}{8}$
$\frac{11}{16}$ bare	$\frac{15}{16}$ full	$1\frac{9}{16}$	$3\frac{7}{8}$	$6\frac{1}{4}$
$\frac{11}{16}$	$\frac{31}{32}$	$1\frac{5}{8}$	4	$6\frac{3}{8}$
$\frac{11}{16}$ full	1 bare	$1\frac{3}{4}$	$4\frac{1}{8}$	$6\frac{1}{2}$
$\frac{23}{32}$	1	$1\frac{7}{8}$	$4\frac{1}{4}$	$6\frac{5}{8}$
$\frac{3}{4}$ bare	1 full	2	$4\frac{3}{8}$	$6\frac{3}{4}$
$\frac{3}{4}$	$1\frac{1}{32}$	$2\frac{1}{8}$	$4\frac{1}{2}$	$6\frac{7}{8}$
		$2\frac{1}{4}$	$4\frac{5}{8}$	7

SQUARES.

SIZES rising by $\frac{1}{16}$ of an Inch.				
Inches	Inches	Inches	Inches	Inches
$\frac{1}{2}$	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$
$\frac{9}{16}$	$1\frac{1}{16}$	$1\frac{9}{16}$	$2\frac{1}{16}$	$2\frac{9}{16}$
$\frac{5}{8}$	$1\frac{1}{8}$	$1\frac{5}{8}$	$2\frac{1}{8}$	$2\frac{5}{8}$
$\frac{11}{16}$	$1\frac{3}{16}$	$1\frac{11}{16}$	$2\frac{3}{16}$	$2\frac{11}{16}$
$\frac{3}{4}$	$1\frac{1}{4}$	$1\frac{3}{4}$	$2\frac{1}{4}$	$2\frac{3}{4}$
$\frac{13}{16}$	$1\frac{5}{16}$	$1\frac{13}{16}$	$2\frac{5}{16}$	$2\frac{13}{16}$
$\frac{7}{8}$	$1\frac{3}{8}$	$1\frac{7}{8}$	$2\frac{3}{8}$	$2\frac{7}{8}$
$\frac{15}{16}$	$1\frac{7}{16}$	$1\frac{15}{16}$	$2\frac{7}{16}$	$2\frac{15}{16}$
				3

EXTRAS.

SIZE, under 2″ to $1\frac{1}{2}$″ square

LENGTH, $1\frac{1}{2}$″ to 2″ over 25 feet

,,   2″ to 3″ over 30 feet

,,   under 5 feet

COLD STRAIGHTENING

SPRING BARS.
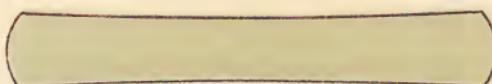
WIDTH.	Min. thick. rolled.	Max. thick. rolled.
Inches.	Inch.	Inch.
3	$\frac{3}{8}$	$\frac{5}{8}$
$3\frac{1}{2}$	$\frac{3}{8}$	$\frac{5}{8}$
4	$\frac{2}{8}$	$\frac{5}{8}$

Carbon as required.

NUT BARS.
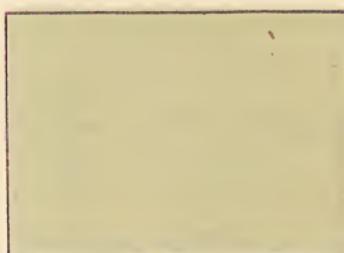
$1\frac{1}{8}''$ to $2\frac{1}{2}''$ Wide.

$\frac{3}{4}''$ to $1\frac{5}{16}''$ Thick.

Intermediate sizes as required.

FLATS AND KEEL BARS.
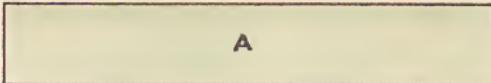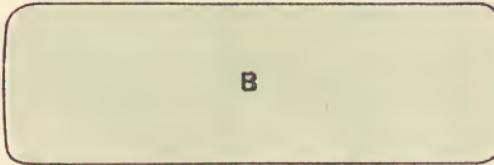
Flat Bars of normal thicknesses will have edges practically square, as indicated in sketch **A**.

Flat Bars over normal thicknesses will have edges more or less rounded, according to the thickness, as approximately indicated in sketch **B**.

EXTRAS.

SIZE, under 5″ wide

     ,,   over 12″ wide

     ,,   under $\frac{5}{16}''$ thick

LENGTH, over 40 feet

     ,,   under 5 feet

COLD STRAIGHTENING

WIDTH.	Normal Thicknesses. Edges practically square. Profile **A**		Greater Thicknesses. Edges slightly rounded. Profile **B**	
Inches.	Inch.	Inch.	Inch.	Inch.
$1\frac{1}{4}$	$\frac{3}{16}$ to	$\frac{5}{8}$	$\frac{11}{16}$ to	1
$1\frac{1}{2}$	$\frac{3}{16}$,,	$\frac{5}{8}$	$\frac{11}{16}$,,	1
$1\frac{3}{4}$	$\frac{3}{16}$,,	$\frac{5}{8}$	$\frac{11}{16}$,,	1
2	$\frac{1}{4}$,,	$\frac{3}{4}$	$\frac{13}{16}$,,	$1\frac{1}{4}$
$2\frac{1}{4}$	$\frac{1}{4}$,,	$\frac{3}{4}$	$\frac{13}{16}$,,	$1\frac{1}{4}$
$2\frac{1}{2}$	$\frac{1}{4}$,,	$\frac{3}{4}$	$\frac{13}{16}$,,	$1\frac{1}{4}$
$2\frac{3}{4}$	$\frac{1}{4}$,,	$\frac{3}{4}$	$\frac{13}{16}$,,	$1\frac{1}{4}$
3	$\frac{1}{4}$,,	$\frac{3}{4}$	$\frac{13}{16}$,,	$1\frac{1}{4}$
$3\frac{1}{4}$	$\frac{1}{4}$,,	$\frac{3}{4}$	$\frac{13}{16}$,,	$1\frac{1}{4}$
$3\frac{1}{2}$	$\frac{1}{4}$,,	$\frac{3}{4}$	$\frac{13}{16}$,,	$1\frac{1}{4}$
$3\frac{3}{4}$	$\frac{1}{4}$,,	$\frac{3}{4}$	$\frac{13}{16}$,,	$1\frac{1}{4}$
4	$\frac{1}{4}$,,	1	$1\frac{1}{16}$,,	$2\frac{1}{2}$
$4\frac{1}{4}$	$\frac{1}{4}$,,	$\frac{3}{4}$	$\frac{13}{16}$,,	$1\frac{1}{4}$
$4\frac{1}{2}$	$\frac{1}{4}$,,	$\frac{3}{4}$	$\frac{13}{16}$,,	$1\frac{1}{4}$
5	$\frac{1}{4}$,,	1	$1\frac{1}{16}$,,	$2\frac{1}{2}$
$5\frac{1}{2}$	$\frac{1}{4}$,,	1	$1\frac{1}{16}$,,	$2\frac{1}{2}$
6	$\frac{3}{8}$,,	1	$1\frac{1}{16}$,,	$2\frac{1}{2}$
7	$\frac{3}{8}$,,	1	$1\frac{1}{16}$,,	$2\frac{1}{2}$
8	$\frac{3}{8}$,,	1	$1\frac{1}{16}$,,	$2\frac{1}{2}$
9	$\frac{3}{8}$,,	1	$1\frac{1}{16}$,,	$2\frac{1}{2}$
10	$\frac{3}{8}$,,	1	$1\frac{1}{16}$,,	$2\frac{1}{2}$
11	$\frac{3}{8}$,,	1	$1\frac{1}{16}$,,	$2\frac{1}{2}$
12	$\frac{3}{8}$,,	1	$1\frac{1}{16}$,,	2
14	$\frac{3}{8}$,,	1	$1\frac{1}{16}$,,	2

EQUAL ANGLES.
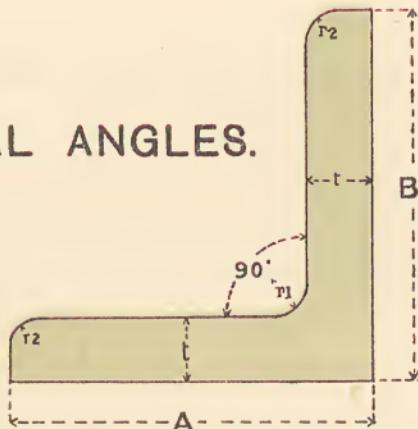
The diagram shows an equal angle cross-section with dimensions labeled: r₂ at top and bottom toe corners, t for thickness, B for vertical height, A for horizontal width, 90° angle at the inner corner, r₁ at the root, and t for the flange thickness.

The dimensions, thickness, and profile of Standard Angles will be in accordance with the accompanying list and sketch.

Angles ordered to the standard thickness will be practically accurate in profile; but if the thickness is between, above, or below the standards, the flanges will be proportionately longer or shorter than the standards. The profile at the back of the toe will be slightly rounded when above the standards, instead of square; but the radii at the root and toe will remain unchanged.

In Equal Sided Angles the thickness of the flanges will be the same.

Angles may be ordered by width of flanges and thickness, or by width of flanges and weight per foot, but not by both. It is suggested that all Angles be ordered by width of flanges and weight per foot.

EXTRAS.

SIZE, under 6 united inches

„ over 12 united inches

„ under $\frac{5}{16}''$ thick

LENGTH, under 5 feet

COLD STRAIGHTENING

ROUND BACK

SIZE. A × B	Min thick. rolled.	Max. thick. rolled.	CORRECT PROFILE. At Thicknesses as under.			RADII. r. 1	r. 2
Inches	t Inch.	t Inch.	t Inch.	t Inch.	t Inch.	Inch.	Inch.
$1\frac{1}{4} \times 1\frac{1}{4}$	$\frac{1}{8}$	$\frac{5}{16}$	·125	—	·25	·20	·15
$1\frac{1}{2} \times 1\frac{1}{2}$	$\frac{1}{8}$	$\frac{3}{8}$	·125	·25	·375	·20	·15
$1\frac{3}{4} \times 1\frac{3}{4}$	$\frac{1}{8}$	$\frac{3}{8}$	·125	·25	·375	·225	·15
2×2	$\frac{1}{8}$	$\frac{3}{8}$	·125	·25	·30	·25	·175
$2\frac{1}{4} \times 2\frac{1}{4}$	$\frac{5}{32}$	$\frac{1}{2}$	·15	·25	·30	·25	·175
$2\frac{1}{2} \times 2\frac{1}{2}$	$\frac{3}{16}$	$\frac{9}{16}$	·25	·375	·50	·275	·20
$2\frac{3}{4} \times 2\frac{3}{4}$	$\frac{3}{16}$	$\frac{1}{2}$	·25	·375	·50	·275	·20
3×3	$\frac{3}{16}$	$\frac{5}{8}$	·25	·375	·50	·30	·20
$3\frac{1}{4} \times 3\frac{1}{4}$	$\frac{5}{16}$	$\frac{5}{8}$	·31	·50	·625	·325	·225
$3\frac{1}{2} \times 3\frac{1}{2}$	$\frac{1}{4}$	$\frac{3}{4}$	·375	·50	·625	·325	·225
4×4	$\frac{5}{16}$	$\frac{3}{4}$	·31	·50	·625	·35	·25
$4\frac{1}{2} \times 4\frac{1}{2}$	$\frac{5}{16}$	$\frac{3}{4}$	·31	·50	·625	·40	·275
5×5	$\frac{3}{8}$	$\frac{7}{8}$	·375	·50	·625	·425	·30
$5\frac{1}{2} \times 5\frac{1}{2}$	$\frac{3}{8}$	$\frac{7}{8}$	·375	·625	·81	·475	·325
6×6	$\frac{7}{16}$	$\frac{7}{8}$	·44	·625	·875	·475	·325
7×7	$\frac{1}{2}$	$\frac{7}{8}$	·50	·625	·75	·55	·375

NOTE. — Where the size of the Angle is printed in Red the Section is British Standard.

UNEQUAL ANGLES.

The dimensions, thickness, and profile of Standard Angles will be in accordance with the accompanying list and sketch.

Angles ordered to the standard thickness will be practically accurate in profile; but if the thickness is between, above, or below the standards, the flanges will be proportionately longer or shorter than the standards. The profile at the back of the toe will be slightly rounded when above the standards instead of square; but the radii at the root and toe will remain unchanged.

In Unequal Sided Angles the flanges may differ in thickness, but the difference up to and including ten united inches will not exceed ·05 inch, and over ten united inches will not exceed ·075 inch.

Angles may be ordered by width of flanges and thickness, or by width of flanges and weight per foot, but not by both. It is suggested that all angles be ordered by size of flanges and weight per foot.

EXTRAS.

Size, under 6 united inches

,, over 12 united inches

,, under $\frac{5}{16}$" thick

Length, under 5 feet

Cold Straightening

Round Back

SIZE. A × B Inches	Min thick. rolled. t Inch.	Max. thick. rolled. t Inch.	CORRECT PROFILE. At Thicknesses as under. t Inch.	t Inch.	t Inch.	RADII. r. 1 Inch.	r. 2 Inch.
1¼ × 1	⅛	¼	·125	—	·187	·175	·125
1¾ × 1½	⅛	⅜	·125	·25	·375	·225	·15
2 × 1½	⅛	⅜	·125	·25	·375	·225	·15
2½ × 1½	5/32	7/16	·15	·31	·437	·225	·15
2½ × 2	5/32	7/16	·15	·31	·437	·25	·175
3 × 1½	5/16	¾	·31	·44	·56	·275	·20
3 × 2	3/16	½	·25	·375	·50	·275	·20
3 × 2½	3/16	½	·25	·375	·50	·275	·20
3½ × 2½	¼	⅝	·25	·375	·50	·30	·20
3½ × 3	¼	⅝	·25	·375	·50	·325	·225
4 × 2½	¼	⅝	·25	·375	·50	·325	·225
4 × 3	¼	⅝	·375	·50	·625	·35	·25
4 × 3½	¼	⅝	·375	·50	·625	·35	·25
4½ × 3	¼	⅝	·375	·50	·625	·35	·25
4½ × 3½	¼	⅝	·375	·50	·625	·35	·25
4½ × 4	5/16	⅝	·31	·50	·625	·35	·25

NOTE.—Where the size of the Angle is printed in Red the Section is British Standard.

Continued on next page.

UNEQUAL ANGLES.

The dimensions, thickness, and profile of Standard Angles will be in accordance with the accompanying list and sketch.

Angles ordered to the standard thickness will be practically accurate in profile; but if the thickness is between, above, or below the standards, the flanges will be proportionately longer or shorter than the standards. The profile at the back of the toe will be slightly rounded when above the standards instead of square; but the radii at the root and toe will remain unchanged.

In Unequal Sided Angles the flanges may differ in thickness, but the difference up to and including ten united inches will not exceed ·05 inch, and over ten united inches will not exceed ·075 inch.

Angles may be ordered by width of flanges and thickness, or by width of flanges and weight per foot, but not by both. It is suggested that all angles be ordered by size of flanges and weight per foot.

EXTRAS.

SIZE, under 6 united inches

,,   over 12 united inches

,,   under $\frac{5}{16}''$ thick

LENGTH, under 5 feet

COLD STRAIGHTENING

ROUND BACK

SIZE. A × B	Min thick. rolled.	Max. thick. rolled.	CORRECT PROFILE. At Thicknesses as under.			RADII. r. 1	r. 2
Inches	t Inch.	t Inch.	t Inch.	t Inch.	t Inch.	Inch.	Inch.
5 × **3**	$\frac{1}{4}$	$\frac{5}{8}$	·375	·50	·625	·35	·25
5 × **3$\frac{1}{2}$**	$\frac{5}{16}$	$\frac{5}{8}$	·31	·50	·625	·375	·25
5 × **4**	$\frac{5}{16}$	$\frac{11}{16}$	·375	·50	·625	·40	·275
5$\frac{1}{2}$ × **3**	$\frac{6}{20}$	$\frac{1}{2}$	·34	—	·50	·375	·25
5$\frac{1}{2}$ × **3$\frac{1}{2}$**	$\frac{6}{20}$	$\frac{1}{2}$	·34	—	·50	·40	·275
6 × **3**	$\frac{5}{16}$	$\frac{3}{4}$	·375	·50	·625	·40	·275
6 × **3$\frac{1}{2}$**	$\frac{5}{16}$	$\frac{3}{4}$	·375	·50	·625	·40	·275
6 × **4**	$\frac{5}{16}$	$\frac{3}{4}$	·31	·50	625	·425	·30
6$\frac{1}{2}$ × **3$\frac{1}{2}$**	$\frac{5}{16}$	$\frac{3}{4}$	·31	·50	·625	·425	·30
6$\frac{1}{2}$ × **4$\frac{1}{2}$**	$\frac{11}{32}$	$\frac{3}{4}$	·34	·50	·625	·45	·325
7 × **3**	$\frac{11}{32}$	$\frac{3}{4}$	·34	·50	·625	·425	·30
7 × **3$\frac{1}{2}$**	$\frac{11}{32}$	$\frac{3}{4}$	·34	·50	·625	·425	·30
9 × **3$\frac{1}{2}$**	$\frac{7}{16}$	$\frac{3}{4}$	·44	·625	·75	·50	·35

NOTE.—Where the size of the Angle is printed in Red the Section is British Standard.

BULB ANGLES.
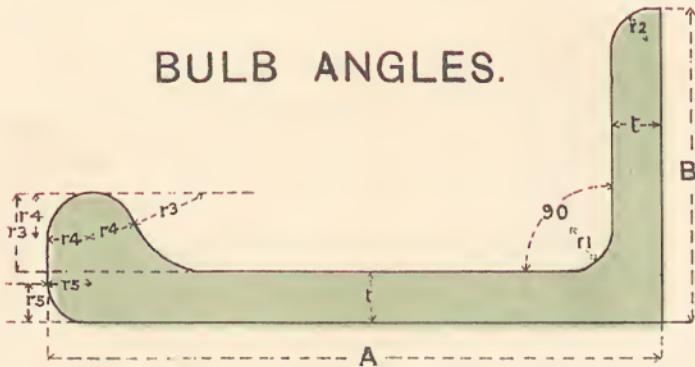
The dimensions, thickness, and profile of Standard Bulb Angles will be in accordance with the accompanying list and sketch.

Bulb Angles ordered to the standard thickness will be practically accurate in profile; but if the thickness is greater than these standards, the width of the flange and bulb, and depth of the web will be proportionately increased. Instead of the profile being square at the back of the toe it will be slightly rounded, but the profile of the curves of the bulb and the radii at root and toe will remain the same; the flange and web will not be of the same thickness; generally, for each ·05 inch increase or decrease in the thickness of the web, the thickness of the flange will be increased or decreased ·025 inch; this difference will not be exceeded.

Bulb Angles may be ordered by depth of web, width of flange, and thickness, or by depth of web, width of flange, and weight per foot, but not by both thickness and weight per foot.

It is suggested that all Bulb Angles be ordered by depth of web, width of flange, and weight per foot.

EXTRAS.

SIZE, over 12 united inches

LENGTH, under 5 feet

COLD STRAIGHTENING

SIZE.	CORRECT PROFILE.		Web Thickness.		RADII.				
A × B	Weight per foot.	Thick-ness t.	Min. rolled.	Max. rolled.	r. 1	r. 2	r. 3	r. 4	r. 5
Inches.	lbs.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.
5 × 2½	9½	·325	·30	·475	·35	·25	·60	·35	·30
7 × 3	15½	·400	·35	·50	·45	·30	·75	·45	·375
7½ × 3	17½	·425	·35	·525	·475	·325	·80	·475	·40
8 × 3½	20	·450	·40	·65	·50	·325	·825	·50	·40
9 × 3½	23	·475	·45	·675	·55	·35	·90	·55	·45

NOTE.— Where the size of the Bulb Angle is printed in Red the Section is British Standard.
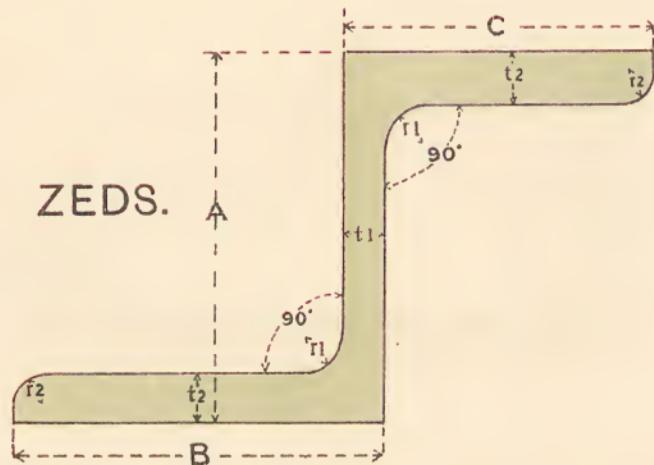
ZEDS.

The dimensions, thickness, and profile of Standard Zeds will be in accordance with the accompanying list and sketch.

Zeds ordered to the standard thickness will be practically accurate in profile ; but if the thickness is greater than these standards, the length of web and flanges will be proportionately increased. The profile at the back of the toe will be slightly rounded instead of square, but the radii at the root and toe will remain unchanged ; the increase in thickness of flanges and web will not be the same ; generally, for each ·05 inch increase in the thickness of the web, the flange will be increased ·025 inch ; this difference will not be exceeded.

Zeds may be ordered by depth and thickness of web and width of flanges, or by depth of web, width of flanges, and weight per foot, but not by both.

It is suggested that all Zeds be ordered by depth of web, width of flanges, and weight per foot.

EXTRAS.

Size, under 3 inches web

,,   over 7 inches web

Length, under 5 feet

Cold Straightening

SIZE.	CORRECT PROFILE.			Web Thickness.		RADII.	
	Weight per foot.	Thickness.		Min. rolled.	Max. rolled.		
A × B × C		Web. t. 1	Flanges t. 2			r. 1	r. 2
Inches.	lbs.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.
3 × 3 × 2½	8¼	·30	·30	·30	·45	·31	·22
5 × 3 × 3	14¼	·35	·45	·325	·50	·375	·25
6 × 3½ × 3½	18	·375	·475	·35	·575	·425	·30

NOTE.—Where the size of the Zed is printed in Red the
Section is British Standard.

CHANNELS.

The dimensions, thickness, and profile of Standard Channels will be in accordance with the accompanying list and sketch.

The standard thickness of flanges will be measured at distances half-way between the extreme edges of the flanges and the nearer side of the web.

Channels ordered to the standard thickness will be practically accurate in profile ; but if the thickness is greater than these standards, the thickness of the web and width of the flanges will be increased by the same amount ; otherwise the profile will remain constant.

Channels may be ordered by depth and thickness of web and width of flanges, or by size of web and flanges, and weight per foot, but not by both.

It is suggested that all Channels be ordered by size of web and flanges and weight per foot.

EXTRAS.

SIZE, under 6″ wide

„ over 10″ wide

LENGTH, under 5 feet

„ over 40 feet

COLD STRAIGHTENING

SIZE.			Weight per foot.	Thickness.		RADII.	
Correct Profile. A × B	Minimum Profile. A × B	Maximum Profile. A × B		Web t. 1	Flange t. 2	r. 1	r. 2
Inches.	Inches.	Inches.	lbs	Inch.	Inch.	Inch.	Inch.
$3\frac{1}{4} \times 1\frac{3}{8}$			$6\frac{3}{4}$	$\frac{3}{8}$	$\frac{3}{8}$	·22	·22
	$3\frac{1}{4} \times 1\frac{5}{16}$		6	$\frac{5}{16}$	$\frac{3}{8}$	·22	·22
		$3\frac{1}{4} \times 1\frac{7}{16}$	$7\frac{1}{2}$	$\frac{7}{16}$	$\frac{3}{8}$	·22	·22
$3\frac{1}{2} \times 1\frac{1}{2}$			$8\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	·25	·25
	$3\frac{1}{2} \times 1\frac{7}{16}$		$7\frac{1}{2}$	$\frac{5}{16}$	$\frac{1}{2}$	·25	·25
		$3\frac{1}{2} \times 1\frac{9}{16}$	9	$\frac{7}{16}$	$\frac{1}{2}$	·25	·25
$3\frac{1}{2} \times 2$			$6\frac{3}{4}$	$\frac{1}{4}$	$\frac{5}{16}$	·312	·22
	$3\frac{1}{2} \times 1\frac{15}{16}$		$6\frac{1}{8}$	$\frac{3}{16}$	$\frac{5}{16}$	·312	·22
		$3\frac{1}{2} \times 2\frac{1}{8}$	$8\frac{1}{4}$	$\frac{3}{8}$	$\frac{5}{16}$	·312	·22
$5 \times 2\frac{1}{2}$			11	$\frac{5}{16}$	$\frac{3}{8}$	·375	·26
	$5 \times 2\frac{7}{16}$		10	$\frac{1}{4}$	$\frac{3}{8}$	·375	·26
		$5 \times 2\frac{5}{8}$	$13\frac{1}{4}$	$\frac{7}{16}$	$\frac{3}{8}$	·375	·26
6×3	6×3		$16\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}b$	·475	·325
		$6 \times 3\frac{1}{4}$	$21\frac{1}{4}$	$\frac{5}{8}$	$\frac{1}{2}b$	·475	·325
$6 \times 3\frac{1}{2}$	$6 \times 3\frac{1}{2}$		18	$\frac{3}{8}$	$\frac{1}{2}b$	·475	·325
		$6 \times 3\frac{3}{4}$	23	$\frac{5}{8}$	$\frac{1}{2}b$	·475	·325
7×3	7×3		$17\frac{1}{2}$	$\frac{3}{8}$	$\frac{1}{2}b$	·475	·325
		$7 \times 3\frac{1}{4}$	$23\frac{1}{2}$	$\frac{5}{8}$	$\frac{1}{2}b$	·475	·325
$7 \times 3\frac{1}{2}$			$20\frac{1}{4}$	$\frac{3}{8}f$	$\frac{1}{2}$	·50	·35
	$7 \times 3\frac{1}{2}b$		$19\frac{1}{2}$	$\frac{3}{8}$	$\frac{1}{2}$	·50	·35
		$7 \times 3\frac{3}{4}$	$25\frac{1}{2}$	$\frac{5}{8}$	$\frac{1}{2}$	·50	·35
$8 \times 3\frac{1}{2}$	$8 \times 3\frac{1}{2}$		$22\frac{3}{4}$	$\frac{7}{16}b$	$\frac{1}{2}f$	·525	·375
		$8 \times 3\frac{11}{16}$	28	$\frac{5}{8}$	$\frac{1}{2}f$	·525	·375

NOTE.—Where the size of the Channel is printed in Red the Section is British Standard.

Continued on next page.

CHANNELS.

The dimensions, thickness, and profile of Standard Channels will be in accordance with the accompanying list and sketch.

The standard thickness of flanges will be measured at distances half-way between the extreme edges of the flanges and the nearer side of the web.

Channels ordered to the standard thickness will be practically accurate in profile; but if the thickness is greater than these standards, the thickness of the web and width of the flanges will be increased by the same amount; otherwise the profile will remain constant.

Channels may be ordered by depth and thickness of web and width of flanges, or by size of web and flanges, and weight per foot, but not by both.

It is suggested that all Channels be ordered by size of web and flanges and weight per foot.

EXTRAS.

SIZE, under 6″ wide

,,   over 10″ wide

LENGTH, under 5 feet

,,   over 40 feet

COLD STRAIGHTENING

SIZE.			Weight per foot.	Thickness.		RADII.	
Correct Profile. A × B	Minimum Profile. A × B	Maximum Profile. A × B		Web t. 1	Flange t. 2	r. 1	r. 2
Inches.	Inches.	Inches.	lbs	Inch.	Inch.	Inch.	Inch.
9 × 3			$18\frac{1}{4}$	$\frac{3}{8}$	$\frac{3}{8}$	·375	·25
	$9 \times 2\frac{15}{16}$		$16\frac{1}{2}$	$\frac{5}{16}$	$\frac{3}{8}$	·375	·25
		$9 \times 3\frac{1}{8}$	22	$\frac{1}{2}$	$\frac{3}{8}$	·375	·25
9 × 3½	**9 × 3½**		$22\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	·50	·35
		$9 \times 3\frac{3}{4}$	30	$\frac{5}{8}$	$\frac{1}{2}$	·50	·35
10 × 3½			$27\frac{1}{4}$	$\frac{1}{2}$	$\frac{1}{2}$	·437	·312
	$10 \times 3\frac{3}{8}$		$23\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	·437	·312
		$10 \times 3\frac{5}{8}$	$31\frac{1}{2}$	$\frac{5}{8}$	$\frac{1}{2}$	·437	·312
12 × 3			29	$\frac{1}{2}$	$\frac{1}{2}$	·437	·312
	$12 \times 2\frac{15}{16}$		$26\frac{1}{2}$	$\frac{7}{16}$	$\frac{1}{2}$	·437	·312
		$12 \times 3\frac{1}{8}$	34	$\frac{5}{8}$	$\frac{1}{2}$	·437	·312
12 × 3½			$30\frac{3}{4}$	$\frac{1}{2}$	$\frac{1}{2}$	·437	·312
	$12 \times 3\frac{7}{16}$		28	$\frac{7}{16}$	$\frac{1}{2}$	·437	·312
		$12 \times 3\frac{5}{8}$	$35\frac{3}{4}$	$\frac{5}{8}$	$\frac{1}{2}$	·437	·312
12 × 3½	**12 × 3½**		33	$\frac{1}{2}$	$\frac{5}{8}b$	·60	·425
		$12 \times 3\frac{3}{4}$	43	$\frac{3}{4}$	$\frac{5}{8}b$	·60	·425
15 × 4			42	$\frac{1}{2}f$	$\frac{5}{8}$	·63	·44
	$15 \times 4b$		$40\frac{3}{4}$	$\frac{1}{2}$	$\frac{5}{8}$	·63	·44
		$15 \times 4\frac{1}{4}b$	$53\frac{1}{2}$	$\frac{3}{4}$	$\frac{5}{8}$	·63	·44

NOTE.—Where the size of the Channel is printed in Red, the Section is British Standard.

BEAMS.

The dimensions, thickness, and profile of Standard Beams will be in accordance with the accompanying list and sketch.

The standard thickness of the flanges will be measured at distances half-way between the extreme edges of the flanges and the nearer side of the web.

Beams ordered to the standard thickness will be practically accurate in profile ; but if the thickness of the web is less or greater than these standards, the width of the section will be increased or decreased by the same amount ; otherwise the profile will remain constant.

Beams may be ordered by depth of section, width of flanges, and thickness, or by depth of section, width of flanges, and weight per foot, but not by both thickness and weight per foot.

It is suggested that all Beams be ordered by depth of section, width of flanges, and weight per foot.

EXTRAS.

SIZE, over 14″ × 6″
    ,,   under 4″ × 3″
    ,,   9″ × 7″, 4¾″ × 1¾″, 10″ × 8″
LENGTH, under 5 feet
    ,,   over 40 feet

SIZE. **A** × **B**	NORMAL PROFILE.					MINIMUM PROFILE.		MAXIMUM PROFILE.	
	Weight per foot.	Web t. 1	Flange t. 2	RADII.		Weight per foot.	Web	Weight per foot.	Web.
				Root r. 1	Toe r. 2				
	lbs.	Inch.	Inch.	Inch.	Inch.	lbs.	Inch.	lbs.	Inch.
3 × **1½**	4	·16	·25	·26	·13	4	·16	5·5	·31
3 × **3**	8.5	·2	·33	·3	·15	8·5	·2	10	·35
4 × **1¾**	5	·17	·24	·27	·13	5	·17	6.5	·28
4 × **2**	7·5	·28	·31	·31	·09	7·5	·28	9	·39
4 × **3**	9·5	·22	·34	·32	·16	9·5	·22	12·5	·44
4¾ × **1¾**	6·5	·18	·32	·28	14	6·5	·18	8·5	·30
5 × **3**	11	·22	·37	·32	·16	11	·22	14	·40
5 × **4½**	18	·29	·45	·39	·19	18	·29	21	·47
6 × **3**	12	·26	·35	·36	·18	12	·26	16	·46
6 × **4½**	20	·37	·43	·47	·23	19·5	·35	25	·62
6 × **5**	25	·41	·52	·51	·25	24	·36	29	·61
7 × **4**	16	·25	·39	·35	·17	15·5	·23	20	·41
8 × **4**	18	·28	·4	·38	·19	18	·28	23	·46
8 × **5**	28	·35	·57	·45	·22	27	·32	32	·49
8 × **6**	35	·44	·59	·54	·27	32	·33	39	·58

For Safe Loads see Table at end.

NOTE.—Where the size of the Beam is printed in Red, the Section
is correct British Standard.
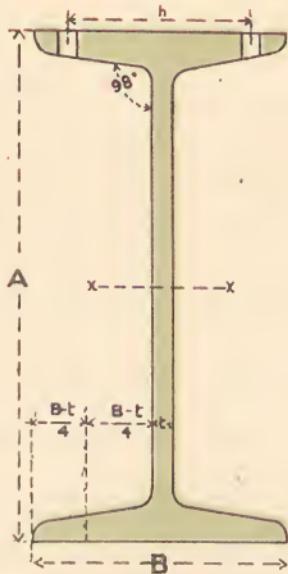
BEAMS.

1. All Beams rolled at the Frodingham Iron and Steel Works are made by the Siemens-Martin Open-hearth Process. The sizes enumerated above are kept in stock of normal weights of each section, in lengths from 10 to 40 feet.

The steel in stock has a tensile stress of 28/32 tons per square inch, and an elongation of not less than 20 per cent. in 8 inch.

2. All Beams, either from rolls or from stock, are supplied to a margin in length of 1 inch up and down, except when specially ordered otherwise, in which case an extra is charged for cutting to dead lengths.

Extras are also charged for Beams under 5 feet long and over 40 feet long.

3. The loads given at end are in the first column 7½ tons per square inch, and in the second column 10 tons per square inch, respectively one-quarter and one-third of the average breaking stress, and are calculated for Beams supported at both ends, with an equally distributed load. For Concentrated Load, Live Load, and for other kind of supports, special calculations will have to be made.

4. In selecting Beams, the depth should be at least one-twentieth of the span, so as to avoid excessive deflection. This limit is marked in the table with a red line.

5. Beams not of normal weights, or to different tests, can only be supplied from the rolls.

EXTRAS.

SIZE, over 14″ × 6″
   ,, under 4″ × 3″
   ,,   9″ × 7″, 4¼″ × 1¾″, 10″ × 8″
LENGTH, under 5 feet
   ,,   over 40 feet

Cold Sawing, Punching, Drilling, Compounding, &c., undertaken.
Prices on Application.

SIZE. A × B	NORMAL PROFILE.					MINIMUM PROFILE.		MAXIMUM PROFILE.	
	Weight per foot.	Web t. 1	Flange t. 2	RADII		Weight per foot.	Web	Weight per foot.	Web.
				Root r. 1	Toe r. 2				
	lbs.	Inch.	Inch.	Inch.	Inch.	lbs.	Inch.	lbs.	Inch.
9 × 4	21	·3	·46	·4	·2	21	·3	25·5	·45
9 × 7	58	·55	·92	·65	·32	54	·42	62	·68
10 × 5	30	·36	·55	·46	·23	28·5	·32	34·5	·49
10 × 5	35	·41	·69	·44	·38	35	·41	41	·58
10 × 6	42	·4	·73	·5	·25	39	·31	47	·54
10 × 8	70	·6	·97	·7	·35	70	·60	78·5	·85
12 × 5	32	·35	·55	·45	·22	32	·35	37	·47
12 × 5	37·5	·41	·65	·41	·37	37·5	·41	45·5	·6
12 × 6	44	·4	·72	·5	·25	44	·4	51	·57
12 × 6	54	·5	·88	·6	·3	52	·45	60	·64
14 × 6	46	·4	·7	·5	25	46	·4	55	·59
14 × 6	57	·5	·87	·6	·3	56	·48	66	·69
15 × 5	40	·41	·59	·5	·28	40	·41	50	·6
15 × 6	59	·5	·88	·6	·3	56	·44	66	·63
16 × 6	62	·55	·84	·65	·32	60	·51	71	·71

For Safe Loads see Table at end.

NOTE.— Where the size of the Beam is printed in Red, the Section is correct British Standard.

TEES.
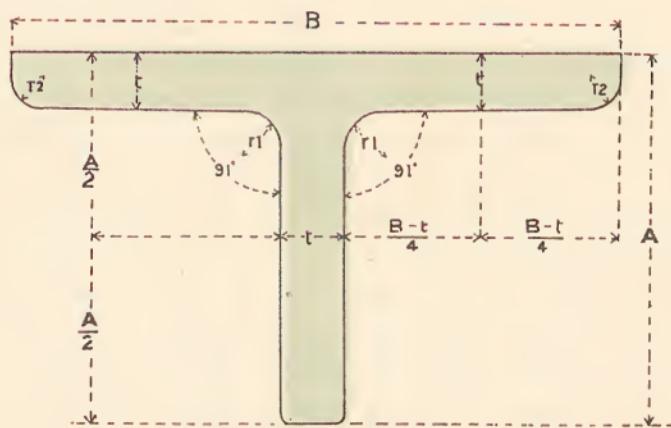
The dimensions, thickness, and profile of Standard Tees will be in accordance with the accompanying list and sketch.

The standard thickness of stem will be at a distance half-way between the extreme edge of the stem and the further side of the flange. The standard thickness of flange will be measured at a distance halfway between the extreme edge of the flange and the nearer side of the stem.

Tees ordered to standard thickness will be practically accurate in profile.

Tees may be ordered by width of flange, depth of section, and thickness, or by width of flange, depth of section, and weight per foot, but not by both thickness and weight per foot.

It is suggested that all Tees be ordered by width of flange, depth of section, and weight per foot.

The taper of $1°$ is equally divided between the web and flange.

EXTRAS.

SIZE, under 6 united inches

,, over 10 united inches

,, under $\frac{5}{16}''$ thick

LENGTH, under 5 feet

COLD STRAIGHTENING

SIZE. Flange. Web. B × A	Thicknesses Rolled.			CORRECT PROFILE. At thicknesses as under.			RADII. r. 1	r. 2
Inches.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.
2 × 1½	¼	—	⅜	·25	—	·375	·25	·175
2 × 2	¼	—	⅜	·25	—	·375	·25	·175
2½ × 2	⅜	—	½	·375	—	·50	·275	·20
2½ × 2½	¼	⅜	½	·25	·375	·50	·275	·20
3 × 2½	—	⅜	½	—	·375	·50	·275	·20
3 × 3	—	⅜	½	—	·375	·50	·30	·20
3½ × 3	⅜	—	½	·375	—	·50	·325	·225
3½ × 3½	⅜	—	½	·375	—	·50	·325	·225
4 × 2½	⅜	½	—	·375	·50	—	·325	·225
4 × 3	⅜	½	—	·375	·50	—	·325	·225
4 × 4	⅜	½	⅝	·375	·50	·625	·35	·25
4 × 5	—	½	⅝	—	·50	·625	·40	·275
5 × 2½	⅜	½	—	·375	·50	—	·35	·25
5 × 3	⅜	½	⅝	·375	·50	·625	·35	·25
5 × 3½	⅜	½	⅝	·375	·50	·625	·375	·25
5 × 4	½	⅝	—	·50	·625	—	·40	·275
5 × 5	½	⅝	—	·50	·625	—	·40	·275
6 × 3	⅜	½	⅝	·375	·50	·625	·40	·275
6 × 3½	½	⅝	—	·50	·625	—	·425	·30
6 × 4	½	⅝	—	·50	·625	—	·425	·30

NOTE.—Where the size of the Tee is printed in Red the Section is British Standard.

SPECIAL SECTIONS.

BULB ANGLES.
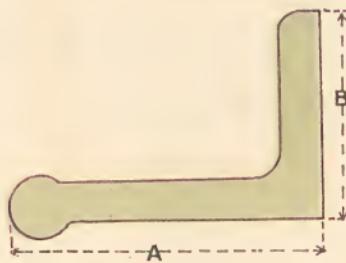
A × B

$3\frac{1}{4}'' \times 1\frac{5}{8}'' \times 4\frac{1}{4}$ lbs. per foot min.

$3\frac{11}{16}'' \times 2\frac{1}{8}'' \times 10$,, ,,

$3\frac{3}{4}'' \times 2\frac{1}{4}'' \times 9\frac{1}{4}$,, ,,

BULB TEES.
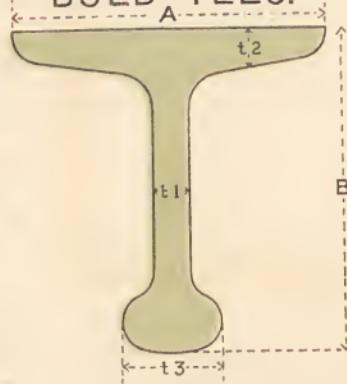
SIZE.	Thickness.		
A × B	t. 1	t. 2	t. 3
Inches.	Inch.	Inch.	Inch.
$1 \times 1\frac{1}{2}$	$\frac{3}{16}$	$\frac{7}{32}$	$\frac{7}{16}$
1×2	$\frac{3}{16}f$	$\frac{7}{32}$	$\frac{1}{2}$
$1\frac{1}{4} \times 4\frac{1}{2}$	$\frac{5}{16}$	$\frac{1}{4}$	1
2×2	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{3}{4}$
$2\frac{1}{2} \times 2\frac{1}{2}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{13}{16}$

SPECIAL ANGLE SECTIONS.

ROUND BACKED
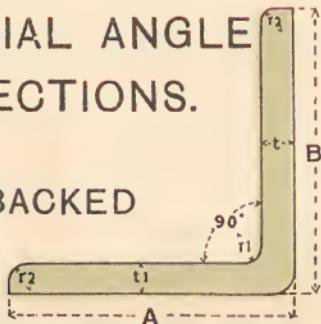
SIZE.	Min. Thickness rolled.	Max. Thickness rolled.	RADII.	
A × **B**	t.	t.	r. 1	r. 2
Inches.	Inch.	Inch.	Inch.	Inch.
3 × 3	$\frac{3}{8}$	$\frac{5}{8}$	·325	·225
3½ × 3½	$\frac{3}{8}$	$\frac{5}{8}$	·40	·275
4 × 4	$\frac{3}{8}$	$\frac{5}{8}$	·40	·275

UNEQUAL SIDED

UNEQUAL THICKNESSES
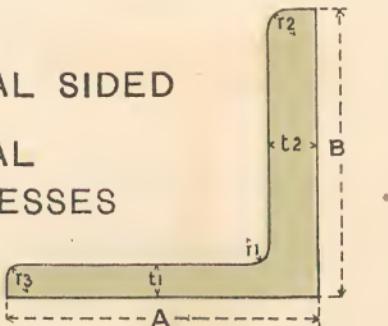
SIZE.	Thicknesses.		RADII.		
A × **B**	t. 1	t. 2	r. 1	r. 2	r. 3
Inches.	Inch.	Inch.	Inch.	Inch.	Inch.
2½ × 1¾	$\frac{7}{16}$	$\frac{7}{8}$	·312	·25	·25
3½ × 3	$\frac{1}{2}$	$\frac{13}{16}$	·312	·312	·25

SQUARE ROOT SQUARE EDGES
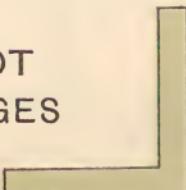
$3'' \times 3'' \times \frac{1}{2}''$ & $\frac{3}{8}''$ thick.

SPECIAL SECTIONS.

TEES.
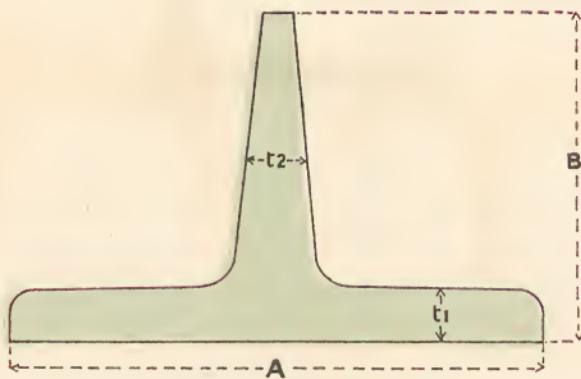
A × B	t. 1	t. 2
$6\frac{1}{2}'' \times 4''$	$\frac{5}{8}''$	$\frac{3}{4}''$
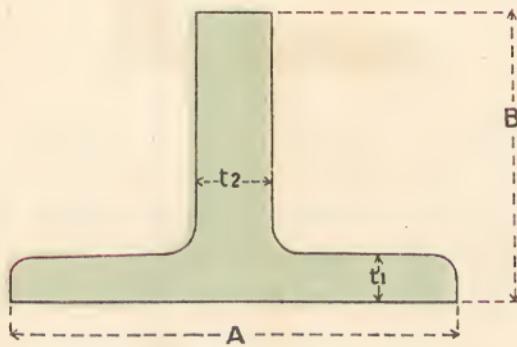
A × B	t. 1	t. 2
$5\frac{1}{2}'' \times 3\frac{1}{2}''$	$\frac{5}{8}''$	$1''$

SPECIAL SECTIONS.

ELECTRICAL CONDUCTOR RAILS,

OF GUARANTEED HIGH CONDUCTIVITY.
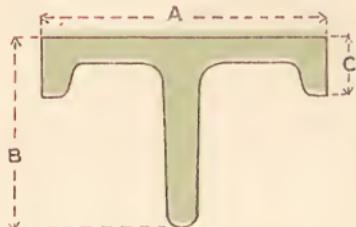
L.C.C. SECTION.

A × B × C

$3\frac{1}{2}'' \times 2\frac{1}{4}'' \times \frac{3}{4}''$

22 lbs. per yard.
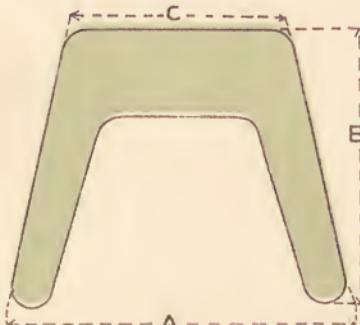
G.W.R. SECTION.

A × B × C

$5\frac{1}{2}'' \times 4\frac{1}{2}'' \times 3\frac{1}{2}''$

103 lbs. per yard.

SLOT RAILS.

L.C.C. SECTION.

A × B × C

$7'' \times 3\frac{1}{2}'' \times 1\frac{15}{16}'' \times 62\frac{1}{2}$ lbs. per yard.

Safe Distributed Dead Load in Tons, Calculated on 7½ and 10 Tons Stress per Square Inch, being one-fourth and one-third of the Average Breaking Weight.

	REFERENCE MARK	SIZE A × B	Weight per Foot lbs	Web t.1 inch	Flange t.2 inch	Root r.1 inch	Toe r.2 inch	Std Centres of Holes h. inch	Moment of Inertia About x-x inch	Moment of Resistance About x-x sq.inch	3ft 7½	3ft 10	4ft 7½	4ft 10	5ft 7½	5ft 10	6ft 7½	6ft 10	8ft 7½	8ft 10	10ft 7½	10ft 10	12ft 7½	12ft 10	14ft 7½	14ft 10	16ft 7½	16ft 10	18ft 7½	18ft 10	20ft 7½	20ft 10	25ft 7½	25ft 10	30ft 7½	30ft 10	35ft 7½	35ft 10	40ft 7½	40ft 10	SIZE A × B × lbs
S B. 1	3 × 1½	4	·16	·25	·26	·13	—	1·65	1·10	1·84	2·45	1·38	1·84	1·10	1·47	·92	1·22	·69	·98																						3 × 1½ × 4
S B. 2	3 × 3	8.5	·2	·33	·3	·15	1·5	3·79	2·52	4·21	5·61	3·16	4·21	2·53	3·36	2·10	2·81	1·58	1·68																					3 × 3 × 8.5
S B. 3	4 × 1¾	5	·17	·24	·27	·13	—	3·64	1·82			2·27	3·03	1·82	2·42	1·51	2·02	1·14	1·51	·91	1·21																			4 × 1¾ × 5
F B. 3a	4 × 2	7.5	·28	·31	·31	·09	—	5·31	2·65			3·32	4·42	2·65	3·54	2·21	2·95	1·66	2·21	1·33	1·77																			4 × 2 × 7.5
S B. 4	4 × 3	9.5	·22	·34	·32	·16	1·5	7·49	3·75			4·68	6·25	3·75	5·0	3·12	4·16	2·34	3·12	1·87	2·50																			4 × 3 × 9.5
S B. 5	4¾ × 1¾	6.5	·18	·32	·28	·14	—	6·71	2·82			3·53	4·71	2·82	3·76	2·35	3·14	1·76	2·35	1·41	1·88	1·17	1·57																	4¾ × 1¾ × 6.5
S B. 6	5 × 3	11	·22	·37	·32	·16	1·5	13·74	5·5					5·5	7·33	4·58	6·11	3·44	4·58	2·75	3·67	2·29	3·06																	5 × 3 × 11
S B. 7	5½ × 4½	18	·29	·45	·39	·19	2·5	22·71	9·08							9·10	12·10	7·57	10·10	5·68	7·57	4·55	6·06	3·79	5·05															5½ × 4½ × 18
F B. 8a	6 × 2	10	·28	·34	·28	·19	—	14·54	4·85							4·84	6·46	4·03	5·39	3·02	4·03	2·42	3·23	2·01	2·69															6 × 2 × 10
S B. 8	6 × 3	12	·26	·35	·36	·18	1·5	20·19	6·73							6·73	8·97	5·61	7·48	4·21	5·61	3·37	4·48	2·80	3·74	2·40	3·21													6 × 3 × 12
S B. 9	6 × 4½	20	·37	·43	·47	·23	2·5	34·44	11·48							11·50	15·30	9·56	12·70	7·17	9·56	5·74	7·65	4·78	6·37	4·10	5·47													6 × 4½ × 20
S B. 10	6 × 5	25	·41	·52	·51	·25	2·75	43·54	14·51							14·50	19·30	12·10	16·10	9·07	12·10	7·26	9·67	6·05	8·06	5·18	6·91													6 × 5 × 25
S B. 11	7 × 4	16	·25	·39	·35	·17	2·25	39·2	11·2									9·3	12·4	7·0	9·3	5·6	7·4	4·6	6·2	4·0	5·3	3·5	4·6											7 × 4 × 16
S B. 12	8 × 4	18	·28	·4	·38	·19	2·25	55·37	13·84									11·50	15·40	8·65	11·50	6·92	9·22	5·77	7·69	4·94	6·59	4·32	5·77	3·84	5·12									8 × 4 × 18
S B. 13	8 × 5	28	·35	·57	·45	·22	2·75	89·36	22·34									18·6	24·8	13·9	18·6	11·1	14·9	9·3	12·4	7·97	10·6	6·97	9·3	6·2	8·26									8 × 5 × 28
S B. 14	8 × 6	35	·44	·59	·54	·27	3·5	110·6	27·65									23·0	30·7	17·3	23·0	13·8	18·4	11·5	15·3	9·8	13·1	8·6	11·5	7·6	10·2	6·9	9·2							8 × 6 × 35
S B. 15	9 × 4	21	·3	·46	·4	·2	2·25	80·5	17·9									14·9	19·9	11·20	14·90	8·95	11·90	7·45	9·94	6·38	8·52	5·58	7·45	4·97	6·63	4·47	5·95	3·57	4·76					9 × 4 × 21
S B. 16	9 × 7	58	·55	·92	·65	·32	4·0	229·7	51·05									42·5	56·7	31·9	42·5	25·5	34·0	21·2	28·4	18·2	24·3	15·9	21·3	14·1	18·9	12·7	17·0	10·2	13·6					9 × 7 × 58
S B. 17	10 × 5	30	·36	·55	·46	·23	2·75	146·5	29·3									24·4	32·6	18·30	24·40	14·60	19·50	12·20	16·30	10·14	13·90	9·16	12·20	8·13	10·80	7·32	9·75	5·87	7·82					10 × 5 × 30
F B. 17a	10 × 5	35	·41	·69	·44	·38	2·75	172·42	34·48									28·6	38·3	21·40	28·70	17·20	23·00	14·30	19·10	12·20	16·40	10·70	14·30	9·50	12·70	8·60	11·50	6·90	9·20					10 × 5 × 35
S B. 18	10 × 6	42	·4	·73	·5	·25	3·5	211·6	42·32									35·2	47·0	26·4	35·2	21·1	28·2	17·6	23·5	13·2	17·6	11·7	15·6	10·5	14·1	8·4	11·2							10 × 6 × 42
S B. 19	10 × 8	70	·6	·97	·7	·35	4·75	343·6	68·72									57·2	76·3	42·90	57·20	34·40	45·80	28·60	38·20	24·5	32·70	21·40	28·60	19·10	25·40	17·20	22·90	13·70	18·30					10 × 8 × 70
S B. 20	12 × 5	32	·35	·55	·45	·22	2·75	218·6	36·43											22·80	30·30	18·20	24·30	15·20	20·20	13·00	17·30	11·40	15·20	10·10	13·50	9·11	12·10	7·28	9·72	6·07	8·10			12 × 5 × 32
F B. 20a	12 × 5	37.5	·41	·65	·41	·37	2·75	253·12	42·18											26·30	35·10	21·00	28·10	17·50	23·40	15·00	20·00	13·10	17·50	11·70	15·60	10·50	14·00	8·40	11·20	7·08	9·37			12 × 5 × 37.5
S B. 21	12 × 6	44	·4	·72	·5	·25	3·5	316·5	52·75											33·00	43·90	26·40	35·10	22·00	29·30	18·50	25·10	16·50	22·00	14·60	19·50	13·20	17·50	10·50	14·10	8·78	11·70			12 × 6 × 44
S B. 22	12 × 6	54	·5	·88	·6	·3	3·5	374·8	62·46											39·10	52·00	31·20	41·70	26·00	34·70	22·30	29·80	19·50	26·00	17·30	23·10	15·60	20·80	12·50	16·70	10·40	13·90			12 × 6 × 54
S B. 23	14 × 6	46	·4	·7	·5	·25	3·5	436·2	62·31											38·90	51·80	31·10	41·50	25·90	34·60	22·20	29·70	19·40	25·90	17·20	23·00	15·50	20·70	12·40	16·60	10·40	13·80	8·89	11·80	14 × 6 × 46
S B. 24	14 × 6	57	·5	·87	·6	·3	3·5	530·2	75·74											47·30	63·10	37·90	50·5	31·50	42·10	27·00	36·10	23·60	31·50	21·00	28·00	18·90	25·20	15·10	20·20	12·60	16·80	10·80	14·40	14 × 6 × 57
F B. 25	15 × 5	40	·41	·59	·5	·28	2·75	400·15	53·5													22·20	29·60	19·00	25·30	16·60	22·20	14·80	19·70	13·30	17·80	10·60	14·20	8·90	11·80	7·60	10·10	6·60	8·90	15 × 5 × 40
S B. 26	15 × 6	59	·5	·88	·6	·3	3·5	629·1	83·88													35·3	46·5	30·3	39·9	26·5	34·9	23·6	31·0	21·2	27·9	17·0	22·3	14·1	18·6	12·1	15·9	10·6	13·9	15 × 6 × 59
S B. 27	16 × 6	62	·55	·84	·65	·32	3·5	725·8	90·66													32·40	43·20	28·30	37·80	25·20	33·60	22·60	30·20	18·10	24·20	15·10	20·10	12·90	17·30	11·30	15·10			16 × 6 × 62

NOTE.—Where the size of the Beam is printed in Red, the Section is correct British Standard.